

WHAT IS CLAIMED IS:

1. A method for managing transmission and reception of data over a network which includes at least a transmission-side apparatus having a plurality of transmission-side functional modules which individually produce and output a plurality of control data sets; and a reception-side apparatus having a plurality of reception-side functional modules which realize independent functions by use of input control data sets, respectively, wherein a control data set output from a transmission-side functional module and transmitted from the transmission-side apparatus is received by the reception-side apparatus and is input to a reception-side functional module corresponding to the transmission-side functional module, wherein

correspondence between at least two transmission-side functional modules among the plurality of transmission-side functional modules and at least two reception-side functional modules among the plurality of reception-side functional modules is established;

the reception-side apparatus stores therein first identification data which represent one transmission-side functional module among the at least two transmission-side functional modules, and second identification data which represent one reception-side functional module among the at least two reception-side functional modules, the one reception-side functional module receiving a control data set output from the one transmission-side functional module;

the transmission-side apparatus adds third identification data to a control data set output from one transmission-side

functional module among the at least two transmission-side functional modules and transmits the control data set within the network, the third identification data representing the one transmission-side functional module; and

the reception-side apparatus uses the first identification data, the second identification data and the third identification data so as to apply a relationship between the first identification data and the third identification data to the second identification data, to thereby specify the one reception-side functional module to which the control data set is to be input.

2. A method for managing transmission and reception of data over a network according to claim 1, wherein

the first identification data and the third identification data represent respectively each one of numbers assigned sequentially to the at least two transmission-side functional modules; and

the relation between the first identification data and the third identification data is difference between a number represented by the first identification data and a number represented by the third identification data.

3. A method for managing transmission and reception of data over a network according to claim 2, wherein

the second identification data represents one of numbers assigned sequentially to the at least two reception-side functional modules; and

the reception-side apparatus specifies the one reception-side functional module in accordance with a number

obtained through a mathematical operation of adding the difference to a number represented by the second identification data.

4. A method for managing transmission and reception of data over a network according to claim 1, wherein

the reception-side apparatus further stores therein fourth identification data consisting of at least one type of data selected from among type data representing a type of the control data set to be transmitted, apparatus type data representing a type of the transmission-side apparatus, and apparatus data representing the transmission-side apparatus;

the transmission-side apparatus adds the fourth identification data to the control data set output from the one transmission-side functional module among the at least two transmission-side functional modules and transmits the control data set within the network; and

the reception-side apparatus specifies the control data set to be received, on the basis of the fourth identification data added to the control data set.

5. A method for managing transmission and reception of data over a network which includes at least a transmission-side apparatus having a plurality of transmission-side functional modules which individually produce and output a plurality of control data sets; and a reception-side apparatus having a plurality of reception-side functional modules which realize independent functions by use of input control data sets, respectively, wherein a control data set output from a

transmission-side functional module and transmitted from the transmission-side apparatus is received by the reception-side apparatus and is input to a reception-side functional module corresponding to the transmission-side functional module, wherein

correspondence between at least two transmission-side functional modules among the plurality of transmission-side functional modules and at least two reception-side functional modules among the plurality of reception-side functional modules is established;

the reception-side apparatus stores therein first identification data which represent one transmission-side functional module among the at least two transmission-side functional modules, second identification data which represent one reception-side functional module among the at least two reception-side functional modules, the one reception-side functional module receiving a control data set output from the one transmission-side functional module, and third identification data for specifying the at least two transmission-side functional modules, while using the relationship with the one transmission-side functional module represented by the first identification data;

the transmission-side apparatus adds fourth identification data to a control data set output from one transmission-side functional module among the at least two transmission-side functional modules and transmits the control data set within the network, the fourth identification data representing the one transmission-side functional module; and

the reception-side apparatus determines to receive the

control data set if the fourth identification data represent one of transmission-side functional modules specified by the first and third identification data, and uses the first identification data, the second identification data and fourth identification data so as to apply a relationship between the first identification data and the fourth identification data to the second identification data, to thereby specify the one reception-side functional module to which the control data set is to be input.

6. A method for managing transmission and reception of data over a network according to claim 5, wherein

the first identification data and the fourth identification data represent respectively each one of numbers assigned sequentially to the at least two transmission-side functional modules; and

the relation between the first identification data and the fourth identification data is difference between a number represented by the first identification data and a number represented by the fourth identification data.

7. A method for managing transmission and reception of data over a network according to claim 6, wherein

the second identification data represents one of numbers assigned sequentially to the at least two reception-side functional modules; and

the reception-side apparatus specifies the one reception-side functional module in accordance with a number obtained through a mathematical operation of adding the

difference to a number represented by the second identification data.

8. A method for managing transmission and reception of data over a network according to claim 5, wherein

the correspondence between the at least two transmission-side functional modules and the at least two reception-side functional modules is established in such a manner that the transmission-side functional module represented by the first identification data and transmission-side functional modules subsequent thereto are sequentially related to the reception-side functional module represented by the second identification data and reception-side functional modules subsequent thereto, respectively; and

the third identification data represent a number of transmission-side functional modules including the one transmission-side functional module represented by the first identification data and transmission-side functional modules subsequent thereto.

9. A method for managing transmission and reception of data over a network according to claim 5, wherein

the reception-side apparatus further stores therein fifth identification data consisting of at least one type of data selected from among type data representing a type of the control data set to be transmitted, apparatus type data representing a type of the transmission-side apparatus, and apparatus data representing the transmission-side apparatus;

the transmission-side apparatus adds the fifth

identification data to the control data set output from the one transmission-side functional module among the at least two transmission-side functional modules and transmits the control data set within the network; and

the reception-side apparatus specifies the control data set to be received, on the basis of the fifth identification data added to the control data set.

10. An apparatus for managing transmission and reception of data over a network which includes at least a transmission-side apparatus having a plurality of transmission-side functional modules which individually produce and output a plurality of control data sets; and a reception-side apparatus having a plurality of reception-side functional modules which realize independent functions by use of input control data sets, respectively, wherein a control data set output from a transmission-side functional module and transmitted from the transmission-side apparatus is received by the reception-side apparatus and is input to a reception-side functional module corresponding to the transmission-side functional module, wherein

correspondence between at least two transmission-side functional modules among the plurality of transmission-side functional modules and at least two reception-side functional modules among the plurality of reception-side functional modules is established;

the transmission-side apparatus comprises transmission controller for adding first identification data to a control data set output from one transmission-side functional module

among the at least two transmission-side functional modules and for transmitting the control data set within the network, the first identification data representing the one transmission-side functional module; and

the reception-side apparatus comprises

management information storage device for storing second identification data which represent one transmission-side functional module among the at least two transmission-side functional modules, and third identification data which represent one reception-side functional module among the at least two reception-side functional modules, the one reception-side functional module receiving a control data set output from the one transmission-side functional module, and

reception controller for using the first identification data, second identification data and the third identification data so as to apply a relationship between the first identification data and the second identification data to the third identification data, to thereby specify the one reception-side functional module to which the control data set is to be input.

11. An apparatus for managing transmission and reception of data over a network according to claim 10, wherein

the management information storage device of the reception-side apparatus further stores fourth identification data consisting of at least one type of data selected from among type data representing a type of the control data set to be transmitted, apparatus type data representing a type of the transmission-side apparatus, and apparatus data representing the transmission-side apparatus;



the transmission controller of the transmission-side apparatus adds the fourth identification data to the control data set output from the one transmission-side functional module among the at least two transmission-side functional modules and transmits the control data set within the network; and

the reception controller of the reception-side apparatus specifies the control data set to be received, on the basis of the fourth identification data added to the control data set.

12. An apparatus for managing transmission and reception of data over a network which includes at least a transmission-side apparatus having a plurality of transmission-side functional modules which individually produce and output a plurality of control data sets; and a reception-side apparatus having a plurality of reception-side functional modules which realize independent functions by use of input control data sets, respectively, wherein a control data set output from a transmission-side functional module and transmitted from the transmission-side apparatus is received by the reception-side apparatus and is input to a reception-side functional module corresponding to the transmission-side functional module, wherein

correspondence between at least two transmission-side functional modules among the plurality of transmission-side functional modules and at least two reception-side functional modules among the plurality of reception-side functional modules is established;

the transmission-side apparatus comprises transmission controller for adding first identification data to a control

data set output from one transmission-side functional module among the at least two transmission-side functional modules and for transmitting the control data set within the network, the first identification data representing the one transmission-side functional module; and

the reception-side apparatus comprises

management information storage device for storing second identification data which represent one transmission-side functional module among the at least two transmission-side functional modules , third identification data which represent one reception-side functional module among the at least two reception-side functional modules, the one reception-side functional module receiving a control data set output from the one transmission-side functional module, and fourth identification data for specifying the at least two transmission-side functional modules, while using the relationship with the one transmission-side functional module represented by the second identification data, and

reception controller for determining to receive the control data set if the first identification data represent one of transmission-side functional modules specified by the second and fourth identification data, and for using the first identification data, the second identification data and third identification data so as to apply a relationship between the first identification data and the second identification data to the third identification data, to thereby specify the one reception-side functional module to which the control data set is to be input.

13. An apparatus for managing transmission and reception of data over a network according to claim 12, wherein

the correspondence between the at least two transmission-side functional modules and the at least two reception-side functional modules is established in such a manner that the transmission-side functional module represented by the second identification data and transmission-side functional modules subsequent thereto are sequentially related to the reception-side functional module represented by the third identification data and reception-side functional modules subsequent thereto, respectively; and

the fourth identification data represent a number of transmission-side functional modules including the one transmission-side functional module represented by the second identification data and transmission-side functional modules subsequent thereto.

14. An apparatus for managing transmission and reception of data over a network according to claim 12, wherein

the management information storage device of the reception-side apparatus further stores fifth identification data consisting of at least one type of data selected from among type data representing a type of the control data set to be transmitted, apparatus type data representing a type of the transmission-side apparatus, and apparatus data representing the transmission-side apparatus;

the transmission controller of the transmission-side apparatus adds the fifth identification data to the control data set output from the one transmission-side functional module among

the at least two transmission-side functional modules and transmits the control data set within the network; and

the reception controller of the reception-side apparatus specifies the control data set to be received, on the basis of the fifth identification data added to the control data set.

15. A method for managing transmission and reception of data over a network composed of a plurality of apparatuses including transmission-side and reception-side apparatuses, in which each reception-side apparatus stores reception identification data for specifying a control data set to be received among control data sets transmitted from transmission-side apparatuses within the network, and by use of the reception identification data, the reception-side apparatus determines whether a control data set transmitted from a transmission-side apparatus is to be received, the method comprising:

a first step of detecting, when a first transmission-side apparatus is to be replaced with a second transmission-side apparatus, a reception-side apparatus having received the control data set transmitted from the first transmission-side apparatus; and

a second step of causing the detected reception-side apparatus to receive a control data set transmitted from the second transmission-side apparatus in place of the control data set transmitted from the first transmission-side apparatus.

16. A method for managing transmission and reception of data over a network according to claim 15, wherein

each of the transmission-side apparatuses transmits a control data set after adding thereto transmission identification data for identifying the control data set; and

the first step includes the sub steps of obtaining the transmission identification data from the first transmission-side apparatus, transmitting the obtained transmission identification data to the reception-side apparatuses within the network, and inquiring whether the control data set transmitted from the first transmission-side apparatus have been received, to thereby detect a reception-side apparatus having received the control data set transmitted from the first transmission-side apparatus.

17. A method for managing transmission and reception of data over a network according to claim 16, wherein

the transmission identification data consist of at least one type of data selected from among type data representing a type of the control data set to be transmitted, apparatus type data representing a type of the transmission-side apparatus, and apparatus data representing the transmission-side apparatus.

18. A data processing apparatus for processing packet data transmitted from a transmission apparatus, the packet data including a control data set stored in a transmission-side memory area among a plurality of transmission-side memory areas of the transmission apparatus and first identification data representing the transmission-side memory area which stores the control data set; the data processing apparatus comprising a reception portion receiving the packet data transmitted

from the transmission apparatus;

a first memory having a plurality of reception-side memory areas for respectively storing the control data set transmitted from the transmission apparatus;

a second memory for storing second identification data representing one transmission-side memory area among the plurality of transmission-side memory areas and third identification data representing one reception-side memory area among the plurality of reception-side memory areas; and

a processing portion specifying one reception-side memory area to which the control data set is to be stored among the plurality of reception-side memory areas of the first memory in accordance with a mathematical operation using the first identification data, the second identification and the third identification data.